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CO-ORDINATION OF LATIN WITH THE OTHER SUBJECTS OF THE HIGH-SCHOOL CURRICULUM

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This paper will deal with our co-ordination of Latin with biology.[1] The task in this field was greatly simplified by the fact that the head of the Department of Biology had at one time expected to teach Latin and was accordingly unusually well equipped and predisposed to use to the fullest extent the pupils' knowledge of Latin.

The assistance rendered is reciprocal, as was pointed out in discussing the co-ordination of Latin with physics. Every word on this list is called up in both the biology class and the Latin class. One practical difficulty encountered to a slight extent in the physics-Latin co-ordination work was found to be much more serious in biology. Biology is taken the first year, and the pernicious habit of writers of first-year Latin textbooks, who apparently conceive the pupil's intellectual life to be bounded by the covers of his Latin book, of including in the first-year work only those words "found in Caesar" and of religiously excluding all others, although they are found in the contemporary English, mathematics, and biology, has denied to the first-year pupil the privilege of using his Latin to its fullest capacity. We are solving the difficulty by gradually including these words in our first-year work. It is just as important for a Greek or Latin word that can be of immediate use in some other subject to be introduced the first year as it is if it is going to occur in Xenophon or Caesar. Here are manifested the evils of the isolation produced by the departmental system. Derivatives not occurring in the first-year work are discussed in connection with the references given below.

One other difficulty has been met. Each beginning class in

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[1] This paper has been prepared with the co-operation of Miss Nellie G. Prescott, head of the Department of Biology.

Latin begins at the same point, but the work of the biology classes is determined more or less by the season. We have therefore grouped the words by subjects and analyzed them in duplicate charts which are hung in turn in both Latin and biology rooms.

The following list is arranged alphabetically:

English Words Used Technically in Biology Which Are Derived from Latin

English word	Derivation	Occurrence
accessory	*cedere*, to go+*ad*, to=to go to or with, to accompany; e.g., accessory buds or muscles	Cat. i. 19
adherent	*haerere*, to stick+*ad*, to=to stick to, to be united (of parts normally separate)	Cat. i. 13
adnate	*nasci*, be born, grow,+*ad*, to=to grow to, to be united=adherent	Caes. ii. 13
adventitious	*adventus* (*venire*, to come+*ad*, to), arrival=that which comes from outside, i.e., abnormal in place or appearance; e.g., adventitious buds	Caes. i. 7
afferent	*ferre*, to carry+*ad*, to=to carry to, to bring or convey inward; e.g., afferent veins or nerves (opposite of efferent)	Caes. i. 13
albumen	*albumen*, white of egg (*albus*, white)=any nutritive matter like white of egg	Ver. iii. 120
alimentary	*alere*, to nourish=pertaining to food; e.g., alimentary canal=canal through which food passes	Caes. i. 18
annual	*annus*, year=lasting only for a year; e.g., an annual plant, an annual (cf. perennial)	Caes. i. 3
alga-ae	*alga*=seaweed	
anterior	comparative of *ante*, before=going before, i.e., situated in front	Caes. i. 34
auditory	*audire*, to hear=pertaining to organs of hearing	Caes. i. 39
auricle	diminutive of *auris*, ear=an ear-like appendage	Cat. i. 6
axillary	*axilla*, dim. of *axis*, axis=pertaining to the angle between stem and leaf, e.g., an axillary bud	Ver. i. 301
bacillus-i	dim. of *baculum*, stick (cf. *bacterium* from Βακτήριον, dim., of Βάκτρον, staff, e.g., tuberculosis bacillus	
bicuspid	*bi*, two+*cuspis*, point	
biennial	*bi*, two+*annus*, year=lasting two years; e.g., a biennial plant, a biennial	Caes. i. 3
bilateral	*bi*, two+*latus*, side=pertaining to two sides; e.g., bilateral symmetry	Caes. i. 25
canine	*canis*, dog; e.g., canine teeth	Ver. iii. 432
capsule	dim. of *capsa*, box	
circulation	*circulari*, to form a circle (from *circulus*, dim. of *circus*), e.g., circulation of the blood	Ver. v. 109

English word	Derivation	Occurrence
circumvallate	*circum*, around+*vallum*, wall; e.g., circumvallate papillae of the tongue	Caes. i. 26
cilium–a	*cilium*, eyelid=hair-like appendages (cf. supercilious)	
coagulation	*coagulare*, to cause to thicken (from *cogere*, to collect, draw together); e.g., coagulation of the blood	Caes. i. 4
conjugation	*jungere*, join+*con*, together=the union of cells in some low forms of plant life	Caes. i. 7
contagious	*tangere*, to touch+*con*, together=diseases communicable by contact (cf. infectious)	Caes. i. 38
contractile	*trahere*, to draw+*con*, together=able to shrink to smaller extent; e.g., contractile muscles	Caes. i. 34
compound	*ponere*, to put, place+*con*, together=composed of more than one element, not simple	Caes. i. 12
corolla	dim. of *corona*, crown=the envelope of a flower	Caes. iii. 16
corpuscle	dim. of *corpus*, body; e.g., blood corpuscles	Caes. i. 25
deciduous	*cadere*, to fall+*de*, down=losing the foliage every year; e.g., a deciduous tree	Caes. i. 15
degeneration	*genus*, kind, type+*de*, from, away=a loss of typical properties; e.g., a degenerate plant	Caes. ii. 17
dehiscent	*hiscere*, to yawn+*de*, off=opening; e.g., a bean pod is dehiscent	Ver. iii. 314
deliquescent	*liquere*, to become liquid+*de*, from, away=to melt away (of a stem lost in its branches); e.g., a deliquescent tree (opposite of excurrent)	Ver. v. 238
density	*densus*, thick=quality of thickness	Caes. ii. 22
dentine	*dens*, tooth=the substance of teeth	Ver. iii. 627
disinfectant	*inficere*, to infect, taint+*dis*, with negative force =freeing from infection	Ver. v. 403
dorsal	*dorsum*, back, e.g., dorsal side of a grasshopper; cf. to indorse a check	Ver. i. 110
duct	*ducere*, to lead=passage; e.g., gall-duct	Caes. i. 6
efferent	*ferre*, to carry+*ex*, out of=to convey outward; e.g., efferent veins (opposite of afferent)	Caes. i. 5
erosion	*rodere*, gnaw+*e*, out, off=to wear away (cf. rodent); e.g., erosion of soil	
excurrent	*currere*, run and *ex*, out=to project (of a stem undivided to the top); e.g., the pine is an excurrent (opposite of deliquescent)	Caes. i. 48
filament	*filum*, thread=a thread-like fiber; e.g., the filament of a flower	Ver. vi. 30
fibro-vascular	*fibra*, fiber+*vasculum*, dim. of *vas*, vessel, duct=consisting of fibrous or woody ducts; e.g., the fibro-vascular bundle of a stem	Ver. vi. 600

English word	Derivation	Occurrence
ferment	*fervere*, to boil = that which causes agitation and decomposition; e.g., the substance in saliva that changes starch to sugar	Ver. i. 308
fermentation	*fermentare* (from *fervere*), to cause to boil or ferment; e.g., fermentation of yeast	
foliage	*folium*, leaf = leaves, collectively	Ver. i. 175
follicle	dim. of *follis*, bellows or windbag	
fracture	*frangere*, to break	Caes. iv. 29
fungus–i	*fungus*, mushroom = a plant group	
funiculus–i	dim. of *funis*, rope = a small fiber, the stem connecting the seed with the ovary wall	Caes. iii. 13
generation	*generare*, to produce (from *genus*, kind)	Caes. i. 48
germ	*germen*, sprout, bud	Ver. i. 341
germination	*germen* = a sprouting; e.g., germination of seeds	
germicide	*germen caedere*, to cut, kill = something that kills germs	Caes. iii. 29
habit	*habitus*, condition (from *habere*, to have) = a permanent possession or property	Caes. i. 2
habitat	pres. ind. 3d sing. act. = it dwells; *habitare*, to dwell; then used as noun; e.g., the habitat of an animal	Cat. i. 29
humus	*humus*, earth = vegetable mold	
incisor	*caedere*, cut + *in*, into; e.g., incisor teeth	Caes. ii. 17
inferior	comparative of *inferus*, low	Caes. i. 16
infectious	*facere*, to do, make + *in*, into = to put in, mix, taint = diseases communicable by introduction of germs into the body	Ver. v. 413
intercellular	dim. of *cella*, small room + *inter*, between, among = situated between or among cells	Ver. i. 433
internode	*nodus*, knot + *inter*, between, among = space between two joints; e.g., internode of a stem	Ver. i. 296
involuntary	*volo, velle*, to be willing + *in*, not = that which acts independently of the will; e.g., involuntary muscles	Caes. i. 7. 5
irritability	*irritare*, to excite = susceptibility to external impulse; e.g., irritability of protoplasm	Ver. iv. 178
lacteals	*lac*, milk = tubes conveying milk-like fluids; e.g., the lacteals of the intestines	Caes. iv. 1
larva–ae	*larva*, ghost = the early form of an animal; e.g., the larva of a butterfly is a caterpillar	
lateral	*latus*, side; e.g., lateral buds	Caes. i. 25
lenticel	*lens*, lentil, and (because of shape) lens = a lens-shaped body of cells; e.g., lenticels on a stem	
locule	dim. of *locus* = a little cell; e.g., the five locules in the core of an apple	Caes. i. 2. 3

English word	Derivation	Occurrence
molecule	dim. of *moles*, mass	
mollusca	*mollis*, soft=a soft-bodied animal with external shell; e.g., oyster	Cat. i. 30
nucleus–i	dim. of *nux*, nut=a kernel	
ocellus–i	dim. of *oculus*, eye	Caes. i. 12. 1
osseous	*os* (*ossis*) bone; e.g., osseous skeleton	Ver. i. 660
oval	*ovum*, egg=having shape of an egg	Caes. iv. 10
ovary	*ovum*, egg=part of flower where seeds are kept	
ovipositor	*ovum*, egg+*ponere*, to place+*tor*, agent=the organ that deposits the eggs; e.g., the ovipositor of the grasshopper	Caes. i. 16. 2
ovule	dim. of *ovum*, egg=the young seed	
palmate	*palma*, open hand=like an open palm; e.g., palmate veining in the geranium leaf	Ver. i. 93
parietal	*paries*, wall; e.g., parietal placenta	Cat. i. 6
pectoral	*pectus*, breast; e.g., pectoral muscles	Ver. i. 36
perennial	*annus*, year+*per*, through=lasting through many years; e.g., a perennial tree, a perennial	Caes. i. 3
placenta	*placenta*, cake=a flat "cake"-shaped organ bearing the ovules; e.g., the placenta of fruit	
plumule	dim. of *pluma*, feather; e.g., the plumule in the embryo of a seed	Ver. iii. 242
pollen	*pollen*, fine flour, e.g., the pollen of flowers	
pollination	*pollen*, fine flour, dust=the supplying of pollen to the stigma	
portal	*porta*, gate or passage; e.g., portal vein	Caes. ii. 6. 2
posterior	comp. of *posterus*, behind	Caes. i. 15
precipitate	*praecipitare*, to cause to fall headlong (from *praeceps*, headlong)=to cause to fall (as a sediment	Caes. ii. 24. 2
primary	*primus*, first; a primary root	Caes. i. 10
pulvillus–i	*pulvillus*, a little cushion; e.g., the pulvillus on the leg of a fly	Cat. iii. 23
pupa–ae	*pupa*, a doll, infant=the stage in development beyond the larva	
receptacle	*capere*, to take+*re*, back=to receive=a place on which the organs of a flower are borne	Caes. i. 5. 4
reflex	*flectere*, to bend+*re*, back; e.g., reflex action of the nerves	Caes. ii. 33
residual	*sedere*, to sit+*re*, back, to remain=that which remains; e.g., residual air in the lungs	Cat. i. 12
respiration	*spirare*, breathe+*re*, back, again=breathing in and out	Ver. i. 404
rudimentary	*rudis*, rude=in an undeveloped state; e.g., rudimentary organs	

English word	Derivation	Occurrence
secondary	*secundus*, following, second; e.g., secondary roots derived from primary	Caes. i. 14. 5
semi-lunar	*semi*, half+*luna*, moon; e.g., semilunar valves	Caes. i. 50
soluble	*solvere*, to loose, dissolve=capable of being dissolved in fluid	Caes. iv. 23. 1
sorus–i	*sorus*, heap; e.g., the sorus on the back of a fern leaf	
spirillum	dim. of *spira*, coil; e.g., spirillum of bacteria	Ver. ii. 217
spontaneous	*sponte*, with free will, of one's own accord; e.g., spontaneous generation	Caes. i. 8
stamen	*stamen*, thread, fiber; e.g., the stamen of a flower	
sublingual	*sub*, under+*lingua*, tongue=situated under the tongue; e.g., sublingual glands	Caes. i. 1
submaxillary	*sub*, under+*maxilla*, jawbone; e.g., sub-maxillary glands	
superior	comp. of *superus*, above	Caes. i. 10. 4
supernumerary	*super*, beyond, above+*numerus*, number=exceeding the normal number	Caes. i. 3. 1
suture	*suere*, to sew=a seam	
tactile	*tangere*, to touch; e.g., tactile papillae in the tongue	Cic. iii. 19
terminal	*terminus*, end; e.g., terminal buds	Cat. iv. 21
tertiary	*tertius*, third; e.g., tertiary roots derived from secondary	Caes. 1. 1
transpiration	*spirare*, breathe+*trans*, through; e.g., the transpiration of moisture from the surface of leaves	Ver. i. 404
tricuspid	*tri*, three+*cuspis*, point=having three prongs; e.g., tricuspid teeth	Ver. i. 81
vaccine	*vacca*, cow=the virus of cowpox as a preventive of smallpox	Ver. iv. 61
valve	*valva*, door; e.g., one-half of a bean-pod is a valve	
variation	*varius*, different=diversity of structure	Caes. ii. 22. 2
vena cava	hollow vein	Ver. iv. 2; Ver. i. 81
ventral	*venter*, belly; e.g., ventral side as opposed to dorsal	Ver. ii. 356
vertebra–ae	*vertebra*, joint of spine (from *vertere*, to turn)	Caes. i. 53
villus–i	*villus*, shaggy hair; e.g., the hairlike villa of the intestines	Ver. i. 702
vital	*vita*, life	Caes. i. 16
viviparous	*vivus*, alive+*parere*, to bring forth=reproduce by birth	Cat. i. 17
voluntary	*volo*, *velle*, to be willing=controlled by one's own will; e.g., voluntary muscles	Caes. i. 7. 5